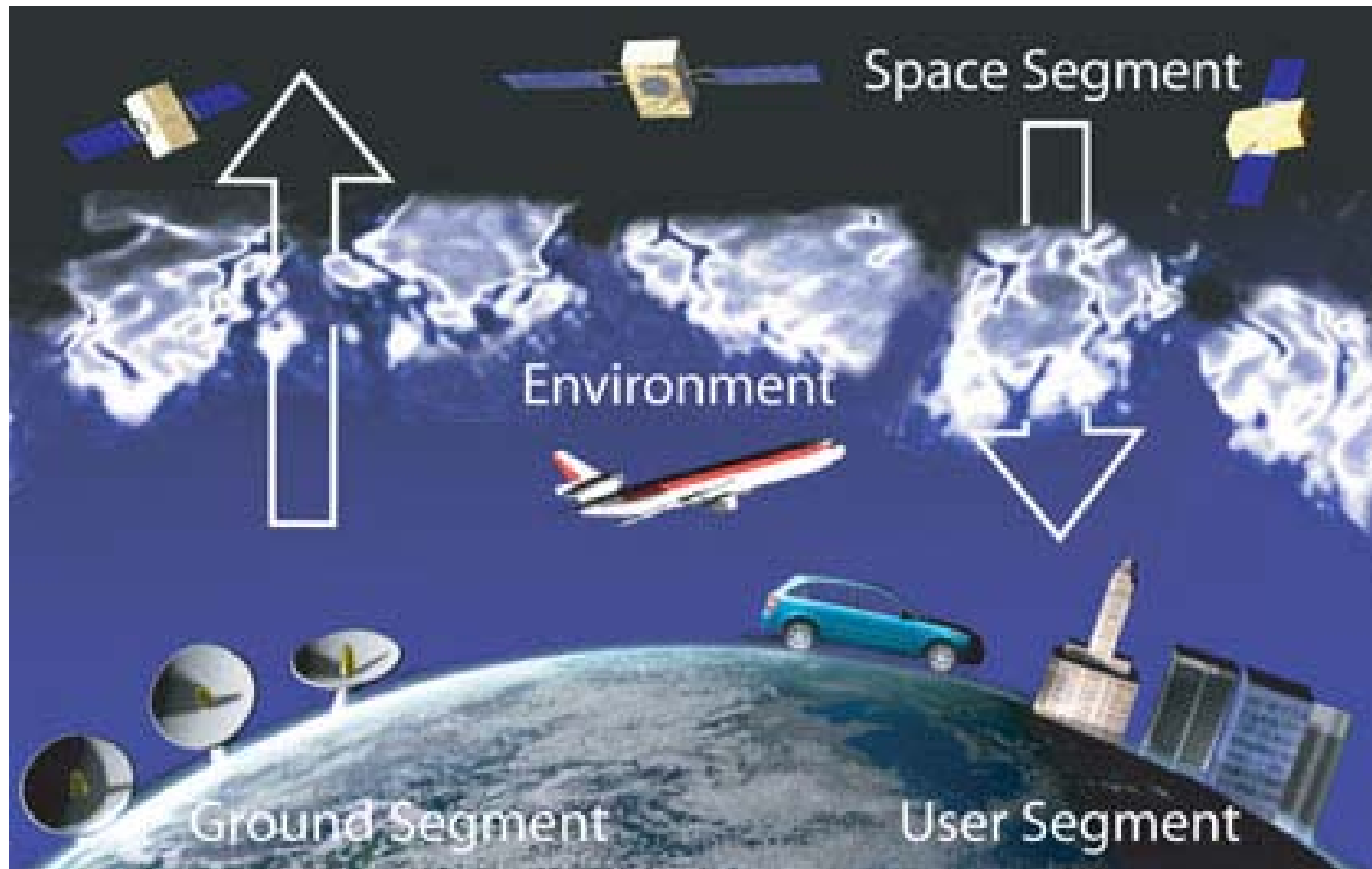


Position
X coordinate : 4607890.27
Y coordinate : 707618.97
Z coordinate : 44401603.83
Latitude (deg) : 44.4184 N
Longitude (deg) : 008.821 E
Elevation (m) : 13

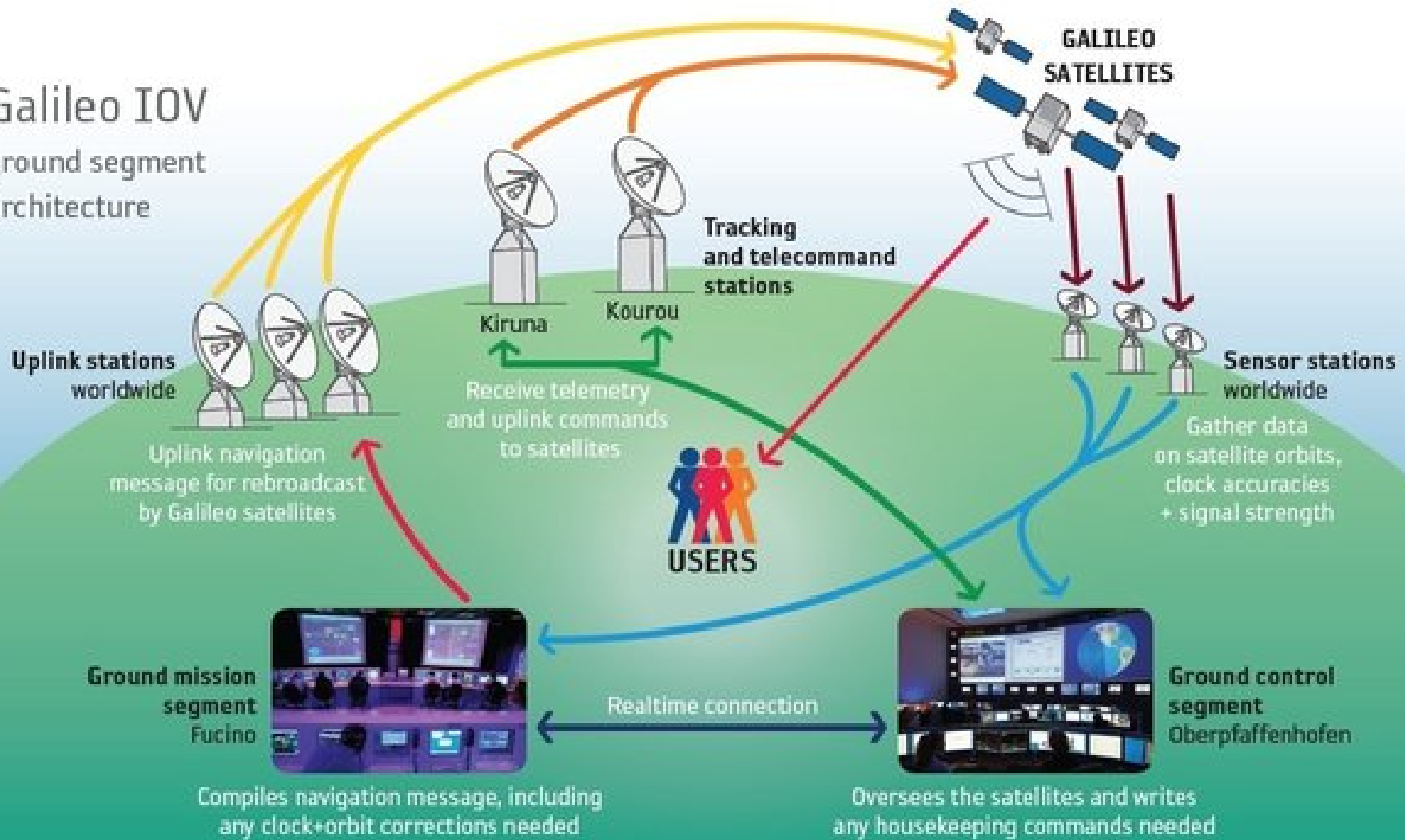
Position
X coordinate : 4848208.47
Y coordinate : 2160371.13
Z coordinate : 4214913.87
Latitude (deg) : 40.4291
Longitude (deg) : -4.2454 W
Elevation (m) : 639.45

Position : 3839591.44
X coordinate : -5059567.53
Y coordinate : 579956.86
Z coordinate : 5.2522 - M
Latitude (deg) : 52.8060 E
Longitude (deg) : -75.57

LATITUDE	LONGITUDE
45.75 N	6.92 E
ELEVATION	CAP
328 m	330



Galileo IOV ground segment architecture



Tracking and Telecommand Center

- Kourou/French Guiana (equator) and Kiruna/Sweden (Polar Circle).
- monitor satellites and transmit commands which from the main control centers to the satellites

- **OHB Systems**
(Hamburg, Germany; Galileo satellites)
- **SSTL, Surrey Satellite Technology Limited**
part of Astrium Group, Guildford, United Kingdom;
navigation payloads
- **Thales Aliena Space**
(Neuilly-sur-Seine Cedex, France; system support
services)
- **Arianespace**
(headquarter in Evry-Courcouronnes CEDEX, France;
launch of satellites from Kourou/French Guiana)

- open access navigation
- commercial navigation
- safety of life navigation
- search and rescue
- public regulated navigation

European Space Agency (ESA) Convention:

Article II - PURPOSE

The purpose of the Agency shall be to provide for and to promote, for exclusively peaceful purposes, cooperation among European States in space research and technology and their space applications, with a view to their being used for scientific purposes and for operational space applications systems

Petersberg Tasks set out in the Petersberg Declaration adopted at the Ministerial Council of the Western European Union (WEU) in June 1992:

- humanitarian and rescue tasks;
- conflict prevention and peace-keeping tasks;
- tasks of combat forces in crisis management, including peacemaking;
- joint disarmament operations;
- military advice and assistance tasks;
- post-conflict stabilisation tasks

- Common Foreign and Security Policy (CFSP) in the Maastrich Treaty in 1993
- European Security and Defense Policy (ESDP) in 2000

**»Three Wise Men« Report »Towards a
Space Agency for the European
Union«to the ESA Director General,
November 2000**

**→ Carl Bildt, Jean Peyrelevade,
Lothar Späth**

European Constitution (Oct 29, 2004),
Section »The Common Security and
Defense Policy«:

“... the Union may use civilian and military means, shall include joint disarmament operations, humanitarian and rescue tasks, military advice and assistance tasks, conflict prevention and peace-keeping tasks, tasks of combat forces in crisis management, including peacemaking and post-conflict stabilisation ...”

European Space Policy 2004

→ page 5 of Council paper

European Parliament resolution of 10 July 2008 on Space and security

“1. Notes the importance of the space dimension to the security of the European Union and the need for a common approach necessary for defending European interests in space; “

Lisbon Treaty

Article 189, 3. The Union shall establish any appropriate relations with the European Space Agency

In 2004, European Defence Agency was established

→ MUSIS Multinational Space-Based Imaging System

“... our global navigation satellite system will improve our daily lives: its precision positioning will increase our mobility; its interoperable Safety-of-Life service will make transport around the world safer; it will bring us more secure banking transactions and more reliable electricity provisions; it will make civil protection more robust and will help saving lives in remote areas thanks to its search and rescue capacity.” (Statement of EC President Barroso on Oct. 21, 2011)

“Galileo is [...] an investment in Europe’s industrial future and competitiveness: it will benefit companies ranging from shipping, fleet management, finance, electricity and telecommunications, with an overall impact estimated at €90 billion over the next 20 years. Space related activities are also key for Europe’s 2020 strategy by creating high skilled jobs, commercial opportunities and boosting innovation all over Europe.”
(Statement of EC President Barroso on Oct. 21, 2011)

”... underlines the necessity of Galileo for autonomous ESDP [European Security and Defense Security] operations, for the Common Foreign and Security Policy (CFSP) and for Europe’s own security” (MEP von Wogau, June 2008)

- European Space Agency (ESA)
- European Commission
- European Council
- European Defense Agency
- national governments and parliaments
- national Ministries of Defense

- Galileo (satellite navigation)
- GMES (Global Monitoring for Environment and Security)
- MUSIS (Multinational Space-Based Imagery System)